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ABSTRACT

The relationship of perceived and actual sociometric status to outcome variables in academic, behavioral, psychological, and physical health adjustment domains among elementary school children was examined. Participants were 180 first, third, and fifth grade public school children, their parents, and teachers. Sociometric status was assessed with a sociometric rating questionnaire. Children also completed measures of depression, anxiety, and perceived competence and estimated the sociometric rating score they received from their classmates. Parents completed a questionnaire concerning observations of their children's behavior; teachers assessed cognitive competence and academic rank in class; and school records provided the remainder of the data. Findings indicated that (1) the relationship between sociometric status and adjustment appears to be evident immediately in children across all four adjustment domains; (2) of the four adjustment domains studied, sociometric status appears to be most highly related to academic adjustment; (3) the relationship between sociometric status and adjustment appears to be strongest for first graders; and (4) it is not necessary for children to perceive their sociometric status accurately for negative outcomes to occur. (RH)

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Sociometric Status and Adjustment:

A Developmental Perspective

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Sociometric Status and Adjustment:

A Developmental Perspective

A link between poor peer relationships during childhood and the later development of problems in such diverse realms as academic performance, behavioral misconduct, and psychological adjustment has been relatively well established (for reviews see Asher & Hymel, 1981; Hartup, 1983). The nature of the connection between low sociometric status during childhood and later maladjustment is not understood, however. Although some recent research has indicated the presence of a relationship between sociometric status and selected indices of adjustment problems in children as young as third grade (e.g., Green, Forehand, Beck, & Vosk, 1980; Vosk, Forehand, Parker, & Rickard, 1982), a more detailed understanding of the relationship between status and adjustment in childhood is needed to provide the basis for a model of the status-adjustment relationship. For example, the relative importance of status to early adjustment across a broad set of outcome measures has not been examined. Nor is it clear what impact development has upon the relationship between social status and adjustment. Finally, it is not known whether children must perceive their status accurately in order for adjustment problems to occur. Answers to all three of these questions are necessary. Therefore, in the present study, the relative strength of the relationship between perceived and actual sociometric status and adjustment across four diverse realms (i.e., academic, behavioral, psychological, and physical health) for children at three grade levels was examined.

Method

First, third, and fifth grade public school children (Total N=180), their parents and teachers participated in this research. Sociometric status was assessed by means of a sociometric rating questionnaire. All children rated each classmate on a written five point scale according to how much they liked to play with that child (Oden & Asher, 1977). For all children, the average play rating

received from their peers was calculated and then standardized within each grade yielding sociometric status scores that would be comparable across grades. Children also completed measures of depression, anxiety, perceived competence, and estimated the sociometric rating score they received from their classmates (see Table 1 for a description of these as well as all other outcome measures). Parents completed a questionnaire concerning observations of their children's behavior, while teachers provided an assessment of cognitive competence and academic rank in class. School records were examined at the end of the year for the remainder of the outcome variables.

Results and Discussion

To assess the relationship between sociometric status and the four domains of outcome variables, correlations were calculated across all subjects. As can be seen in the first column of Table 2, all of the academic, behavioral, and psychological outcome measures, and one of the two physical health measures (i.e., Days Absent) were related significantly to sociometric status, with lower status being associated with a higher degree of negative oucome. Thus, low sociometric status in elementary school appears to be related concomitantly to difficulties in adjustment, and not only predictive of the development of later problems.

In order to compare the relative importance of sociometric status across the four outcome domains, the mean correlation between the indices comprising each outcome measure and sociometric rating was calculated and tested for significant differences. The resulting mean academic outcome correlation ($r = .47$) was significantly greater than the mean psychological ($r = .16$) and physical health ($r = .095$) correlations ($z = 3.24$, $p < .01$; $z = 3.63$, $p < .001$). In addition, the mean behavioral outcome correlation with sociometric status ($r = .32$) was significantly greater than that of the mean physical health correlation ($z = 1.97$, $p < .05$). No other correlations were significantly different. Therefore, it appears that sociometric status is most highly related to academic adjustment in school, although the direction of influence is unclear from these data.

In terms of a developmental analysis of these data, sociometric status appeared to be most highly related to outcome variables at grade one and then drop off with increasing age (see Table 2). However, only four correlations were significantly different. The correlation between GPA and status at grade one was significantly higher than those at the third ($z = 2.06$, $p < .05$) and fifth ($z = 3.05$, $p < .01$) grades, while the correlation between the Teacher Cognitive Competence measure and status was also significantly greater at first than at the third ($z = 1.98$, $p < .05$) and fifth ($z = 2.97$, $p < .01$) grades. In addition, several correlations were marginally different. The correlation between social status and Teacher Rank was marginally higher at first grade than at the third and fifth grades ($z = 1.84$, $p < .07$; $z = 1.75$, $p < .08$). Similarly, the correlations between social status and both Conduct grade and CAT Math was marginally greater for first graders than for fifth graders ($z = 1.92$, $p < .06$; $z = 1.71$, $p < .09$).

In order to test whether children's perceptions of their status influenced the relationship between sociometric status and the outcome variables, the children's perceived status was assessed in two ways that were somewhat similar to those used by Hymel (1983). Children estimated the mean sociometric rating they believed they would receive from their classmates and completed the Perceived Social Competence subscale of Harter's (1982) Perceived Competence Scale for Children. The correlation between the children's estimated and actual sociometric rating was .12 ($p<.05$, $n = 180$), while the correlation between their Perceived Social Competence score and actual rating was .23 ($p < .01$, $n = 180$). The correlation between these two perception measures was .29 ($p < .001$, $n = 180$). Both of these measures were standardized by grade and correlated with the outcome variables across all subjects and by grade. As can be seen in Tables 3 and 4, not only were few of these correlations significant, but most were significantly lower than the corresponding correlations between actual status and the outcome measures. Thus, it does not appear that children's perception of their status is related to the development of negative outcomes.

However, what may have been important in terms of the status-adjustment relationship was the accuracy of the children's perceptions of their sociometric status. This notion was tested in two ways. First, a difference score was calculated between the children's standardized estimated mean sociometric ratings and their actual standardized mean sociometric ratings received from their peers. The absolute value of this difference score was then correlated with the outcome measures across all subjects and by grade. Again, relatively few correlations were significant. However, one potential problem involving the use of difference scores in this instance was that estimation on the five point rating scale employed lent itself to potential ceiling effects which may have constrained the children's responses. For example, highly rated children were unable to grossly overestimate their status due to the upper limit of the scale, just as low status children were unable to vastly underestimate their acceptance given their low standing on the instrument. Thus, it may not be surprising that analyses involving these difference scores revealed no effects on the adjustment indices.

It may have been though that the critical element for the development of adjustment difficulties was the interaction between sociometric status and perceptual accuracy. It was predicted that the children most likely to show negative outcomes on the adjustment indices would be primarily the low status children who either underestimated or accurately perceived their social status and perhaps, to a lesser degree, those average or high status children who underestimated their status. To examine this possibility, approximately equal tertile groups were formed on the basis of the children's perceptions of their own social status resulting in groups of children who estimated their rating to be either low, moderate, or high in comparison to their peers. A similar tertile division of the children's actual sociometric rating scores resulted in groups of low, average, and high social status children. Thus, in this 3 x 3 design configuration, the three diagonal cells contained those children who most accurately perceived their social status, while the off-diagonal cells represented

those children who either underestimated or overestimated their sociometric rating.

A series of 3 (actual rating type) X 3 (perceived rating type) ANOVAs were performed with the adjustment measures listed in Table 1 as the dependent variables. Not surprisingly, significant main effects for actual rating type were found for all of the academic outcome measures [i.e., GPA: $F(2,154) = 20.40$, $p < .0001$; CAT Read: $F(2,173) = 15.00$, $p < .0001$; CAT Math: $F(2,171) = 13.08$, $p < .0001$; Teacher Rank: $F(2,173) = 22.05$, $p < .0001$; Teacher Cognitive Comp.: $F(2,179) = 18,28$, $p < .0001$], all of the behavioral adjustment indices [i.e., Conduct Grade: $F(2,163) = 9.03$, $p < .0001$; Total Externalizing Score: $F(2,123) = 4.25$, $p < .05$], all of the psychological outcome measures [i.e., Depression: $F(2,179) = 6.50$, $p < .01$; Anxiety: $F(2,178) = 4.28$, $p < .05$; Perceived General Competence: $F(2,179) = 4.03$, $p < .05$], and one of the two physical health adjustment indices [i.e., Days Absent: $F(2,175) = 3.51$, $p < .05$). In terms of the perceived rating variable, significant main effects were found only for the Teacher Rank [$F(2,173) = 3.37$, $p < .05$] and Perceived General Competence [$F(2,1790 = 4.92$, $p < .01$] variables, while marginally significant main effects resulted for the analyses involving CAT Read [$F(2,173) = 2.91$, $p < .06$], Total Externalizing Score [$F(2,123) = 2.77$, $p < .07$], and Anxiety [$F(2,178) = 2.96$, $p < .06$]. Only one of the interaction effects, that involving the Conduct variable, was significant [$F(4,163) = 3.04$, $p < .05$] and it did not seem to follow the predicted pattern. From an examination of the cell means, it appeared that those children who were in the low actual status group but perceived their social rating to be in the high group received the lowest conduct grades from their teachers. Thus, it does not appear that either children's perceptions of their social status nor the accuracy of those perceptions are generally relevant to the social status-adjustment relationship. Rather, some other type of causal mechanism appears to be operating (e.g., differential treatment by teachers and/or peers, behavioral skill differences, reputation, lack of social support).

Thus, in summary, the present research yielded the following findings: (1) The relationship between sociometric status and adjustment appears to be evident immediately in children across all four adjustment domains (i.e., academic, behavioral, psychological, and physical health), (2) Of the four adjustment domains studied, sociometric status appears to be most highly related to academic adjustment, (3) The relationship between sociometric status and adjustment appears to be strongest for first graders, and (4) It is not necessary for children to perceive their sociometric status accurately for the development of negative outcomes.

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Table 1

Description of Outcome Measures

Outcome Measures	
Academic	
GPA	Calculated mean of grades received in academic courses across all four quarters
CAT Read	Reading score obtained on the California Achievement Test administered during spring of school year
CAT Math	Math score obtained on the California Achievement Test administered during spring of school year
Teacher Rank	Teacher's estimate of student's academic rank in class (1 = highest)
Teacher Cognitive Comp.	Teacher's perception of student's cognitive competence according to teacher's version of Perceived Competence Scale for Children (Harter, 1982)
Behavioral	
Conduct Grade	Calculated mean of grades given by teacher for behavioral conduct across all four quarters
Total Externalizing	Externalizing Behavior subscale score from parents' completion of The Child Behavior Checklist (Achenbach & Edelbrock, 1981)
Psychological	
Depression	Child's score on Child Depression Inventory (Kovacs, 1980)
Anxiety	Child's score on Children's Manifest Anxiety Scale (Casteneda, McCandless & Palermo, 1956)
Perceived General Comp.	Child's Perceived General Competence subscale score on Perceived Competence Scale for Children (Harter, 1982)
Physical Health	
Days Absent	Total number of days absent across the school year
Total Physical	Total Physical Complaints from parents' completion of The Child Behavior Checklist (Achenbach & Edelbrock, 1981)

Table 2

Outcome Measures Correlated with Sociometric Rating
Across All Subjects and By Grade

Outcome Measures	All Ss	Grade 1	Grade 3	Grade 5
Academic				
GPA	.52*** (n=155)	.74*** (n=50)	.49*** (n=55)	.31* (n=50)
CAT Read	.41*** (n=174)	.58*** (n=54)	.36** (n=57)	.31** (n=63)
CAT Math	.42*** (n=172)	.61*** (n=52)	.38** (n=57)	.36** (n=63)
Teacher Rank	-.53*** (n=174)	-.68*** (n=57)	-.45*** (n=53)	-.45*** (n=64)
Teacher Cognitive Comp.	.49*** (n=180)	.71*** (n=57)	.47*** (n=59)	.32** (n=64)
Behavioral				
Conduct Grade	.39*** (n=164)	.52*** (n=55)	.38** (n=56)	.20[A] (n=53)
Total Externalizing	-.25** (n=124)	-.43** (n=39)	-.19 (n=40)	-.18 (n=45)
Psychological				
Depression	-.24*** (n=180)	-.25* (n=57)	-.35** (n=59)	-.13 (n=34)
Anxiety	-.07 (n=179)	-.13 (n=56)	-.15 (n=59)	.07 (n=64)
Perceived General Comp.	.16* (n=180)	.19[A] (n=57)	.24* (n=59)	.09 (n=64)
Physical Health				
Days Absent	-.19** (n=176)	-.26* (n=55)	-.08 (n=57)	-.22* (n=64)
Total Physical Complaints	.001 (n=124)	.06 (n=39)	-.06 (n=40)	.03 (n=45)

[A] $p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

Table 3

Outcome Measures Correlated with Perceived Sociometric Rating Across All Subjects and by Grade

Outcome Measures	All Ss	Grade 1	Grade 3	Grade 5
Academic				
GPA	-.03 (n=155)	.10 (n=50)	-.10 (n=55)	-.11 (n=50)
CAT Read	-.14* (n=174)	.02 (n=54)	-.30* (n=57)	-.12 (n=63)
CAT Math	-.08 (n=172)	.08 (n=52)	-.27* (n=57)	-.05 (n=63)
Teacher Rank	.11[A] (n=134)	.05 (n=57)	.22[A] (n=53)	.08 (n=64)
Teacher Cognitive Comp.	-.07 (n=180)	-.03 (n=57)	-.10 (n=59)	-.08 (n=64)
Behavioral				
Conduct Grade	-.08 (n=164)	-.19* (n=55)	.08 (n=56)	-.03 (n=63)
Total Externalizing	.09 (n=124)	.19 (n=39)	.05 (n=40)	.05 (n=45)
Psychological				
Depression	-.16* (n=180)	-.07 (n=57)	-.25* (n=59)	-.16 (n=64)
Anxiety	-.14* (n=179)	-.03 (n=56)	-.30* (n=59)	-.08 (n=64)
Perceived General Comp.	.13* (n=180)	.04 (n=57)	.23* (n=59)	.13 (n=64)
Physical Health				
Days Absent	-.13* (n=176)	-.24* (n=55)	-.05 (n=57)	-.12 (n=64)
Total Physical Complaints	.02 (n=124)	.17 (n=39)	-.03 (n=40)	-.03 (n=45)

[A] $p < .10$.
*$p < .05$.
**$p < .01$.
***$p < .001$.

Table 4

Outcome Measures Correlated with Perceived Social Competence Across All Subjects and by Grade

Outcome Measures	All Ss	Grade 1	Grade 3	Grade 5
Academic				
GPA	.14* (n=155)	.19[A] (n=50)	.10 (n=55)	.14 (n=50)
CAT Read	.16* (n=174)	.28* (n=54)	.03 (n=57)	.17[A] (n=63)
CAT Math	.12[A] (n=172)	.25* (n=52)	.07 (n=57)	.09 (n=63)
Teacher Rank	-.17* (n=174)	-.22[A] (n=57)	-.04 (n=53)	-.23* (n=64)
Teacher Cognitive Comp.	.15* (n=180)	.18[A] (n=57)	.07 (n=59)	.21* (n=64)
Behavioral				
Conduct Grade	.04 (n=164)	.10 (n=55)	-.01 (n=56)	-.14 (n=53)
Total Externalizing	-.08 (n=124)	-.07 (n=39)	-.03 (n=40)	-.17 (n=45)
Psychological				
Depression	-.49*** (n=180)	-.42*** (n=57)	-.50*** (n=59)	-.56*** (n=64)
Anxiety	-.42*** (n=179)	-.32*** (n=56)	-.54*** (n=59)	-.40*** (n=64)
Perceived General Comp.	.51*** (n=180)	.53*** (n=57)	.38** (n=59)	.67*** (n=64)
Physical Health				
Days Absent	.04 (n=176)	.03 (n=55)	.09 (n=57)	.008 (n=64)
Total Physical Complaints	-.03 (n=124)	-.03 (n=39)	-.04 (n=40)	.003 (n=45)

[A] $p < .10$.
* $p < .05$.
** $p < .01$.
*** $p < .001$.